

Connecticut's Idle Free Corridor Initiative: Secondi Pilot Project, Milford, CT

Applicant: Connecticut Department of Environmental Protection (CT DEP)

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Funding Requested: \$390,000.00

Project Description: This project will provide the first critical location in an effort to establish an idle-free corridor in Connecticut by installing and evaluating stationary idle reduction technology at the Secondi Inc. truck stop/travel plaza located in Milford, CT situated along the corridor of I-95 and I-91.

Overview:

The Connecticut Department of Environmental Protection (CTDEP) is requesting funding from EPA to begin the construction of an idle-free corridor through the state by the successful use Advanced Truck Stop Electrification (ATSE) technology at a well-situated truck stop facility located at the confluence of interstates I-95 and I-91, the most traveled area in Connecticut, and one of the most traveled in the northeast. Because this area is a primary transportation corridor between New England and the rest of the country, it is an ideal location for such a project. The potential health benefits from reducing diesel emissions in a state with nonattainment areas for both 8-hour ozone and PM_{2.5} are also strong considerations for investing in idle reduction technology in this location and for developing an idle free corridor in the state.

Narrative Workplan:

1. Project Summary:

a. Idle Free Corridor Development:

The establishment of an idle-free corridor in Connecticut would mark a perfect convergence of CTDEP's long standing goal to reduce diesel emissions in the state and the Connecticut Department of Transportation's (CTDOT) ongoing research aimed at

alleviating the state's deficit of truck stops and rest areas. CTDEP's national leadership in reducing diesel emissions is reflected in its Strategic Plan for Diesel Risk Reduction and in CTDEP's work in implementing Clean School Bus and Clean Construction Initiatives, both of which have received national recognition by EPA. (See Appendix A for fact sheets on these initiatives). CTDEP has established effective partnerships in pursuing these efforts and will use this framework in pursuing this idle free corridor initiative. Connecticut's diesel reduction strategy outlines a multi-faceted approach to reducing diesel emissions from school buses, engine idling, off-road construction equipment, heavy diesel truck engines, and distributed generators.

School bus retrofit programs are highlighted in the strategic plan, with successful programs completed in Norwich, underway in New Haven and being initiated in Hartford and Bridgeport. CTDEP has worked successfully with statewide organizations and municipalities to pursue funding opportunities and build capacity at the local level for nationwide other Supplemental Environmental Project (SEP) funding such as the Toyota SEP program. These programs will enhance benefits from an idle free corridor.

Anti-idling is a featured component of the plan and an effective low-cost strategy to reduce risk exposure to diesel exhaust. The Connecticut School Transportation Association (COSTA) and CTDEP adopted a memorandum of understanding in 2002 as part of a statewide anti-idling campaign focused on eliminating unnecessary idling of school buses. Since 2002 this effort has been revised and successfully transferred to eliminate unnecessary idling at truck stops state wide. As part of this effort, CTDEP has implemented an effective compliance assurance initiative combining education and outreach through the implementation of a signage program, along with targeted enforcement in our non-attainment and environmental justice areas. CTDEP has worked with CTDOT to develop, distribute, and post anti-idling signs on school property and at rest stops throughout the State. Notices of Violation are being issued to enforce compliance with the regulatory requirements and to increase awareness. One key element to success in CTDEP's enforcement efforts is to provide the necessary infrastructure to eliminate idling as an alternative. This project will help to advance that goal.

This proposed project, if funded, would advance Connecticut's important work in reducing diesel emissions by implementing the strategic plan's goal to "pursue funding opportunities for truck stop electrification." It will complement two other efforts CTDEP is pursuing in partnership with the Connecticut Department of Motor Vehicles (CTDMV). These programs include education and outreach to truck owners and operators on the California Not to Exceed Standards (NTE) and a stakeholder effort currently underway to evaluate enhancements to Connecticut's heavy-duty diesel inspection and maintenance program. The enhancements contemplated include adopting a tighter standard for opacity and implementing a fleet certification program. Efforts to develop an idle free corridor would be a natural outgrowth of these existing efforts.

Education and outreach feature prominently in the strategic plan. In conjunction with the school bus retrofit program, CTDEP has developed an educational curriculum for middle school science classes grades 6-8, teaching students about sources of air pollution

including diesel, how it affects their health and the environment, and what students can do to become environmental leaders. If the project is funded, CTDEP will be able to leverage its established public/private partnerships established with local communities and schools currently participating in diesel retrofit and curriculum projects.

The Connecticut Department of Transportation (CTDOT) has made it a priority to develop more parking capacity for trucks at rest stops and truck stops throughout the state. In 1996, a Federal Highway Administration study cited Connecticut as being among the areas having the greatest shortages of truck parking spaces along I-95. According to CTDOT figures, the I-95 highway and rest stop system in Connecticut was designed to accommodate a projected 7,700 trucks per day, but in its first interim report on truck stop and rest area parking, CTDOT estimated that 17,000 trucks crossed the border between New York and Connecticut on I-95 daily. Interim Report #2 of the same study identified a shortfall of 1,200 truck parking spaces in 2000 and projected a shortfall of 1,600 spaces by 2020. The final report, published in 2001, concluded that reconfiguring the spaces at existing public rest stops would not eliminate the problem; the establishment of new facilities, public and private, would be needed.

The successful installation and operation of ATSE technology at a private truck stop could encourage the development of new, electrified truck stops in the state. CTDOT is initiating a feasibility study to evaluate future changes to Connecticut's network of rest areas and service plazas. If selected for funding, CTDEP and CTDOT can evaluate this pilot to explore transferring the results to other sites in developing an anti-idling corridor throughout the state of Connecticut.

b. ATSE Facility Site Selection:

CTDEP has long history of studying diesel pollution controls, has participated in a number of state and regional assessments of the problem and has taken a lead in implementing legislation and regulations to control this type of air pollution. An extensive database is therefore available for selecting an appropriate site for the establishment of an ATSE facility as a first step in the construction of an idle free corridor through the state. Selection criteria have been developed and a site has been selected along I-95, approximately 10 miles west of New Haven, in Milford, Connecticut (see map from NESCAUM project). Secondi Truck Stop (Secondi), a 100-space, privately owned facility, has agreed to partner with CTDEP in installing, demonstrating and evaluating up to 20 ATSE units under this grant.

Site selection for the establishment of an ATSE project under this grant is the critical step in the process. CTDEP evaluated several studies to help identify potential sites. A recent study by CTDOT has provided critical background information on truck volume and driving patterns. CTDOT recently conducted a survey of truck drivers using truck stops and rest areas in the state. The study revealed that 81% of responding drivers used I-95 when traveling through Connecticut as compared with 73% using I-84 and 59% using I-91. With the added consideration that the North East States for Coordinated Air Use Management (NESCAUM) has developed, with EPA support, a map of I-95 for truck

stop electrification planning, the Connecticut portion of I-95 has been chosen for the preferred area for implementing a stationary idle technology application in the State.

The other criteria being used for the selection of the first location include: 1) maximizing facility usage by siting west of the split with I-91 where interstate traffic volume is the greatest, 2) siting within the nonattainment area for 8-hour ozone and PM_{2.5} to maximize the benefits of emissions reductions for the State Implementation Plan (SIP), and 3) improving the air quality status of New Haven by siting upwind of the city, 4) selecting a partner based on compliance history and commitment to the success of the project.

CTDOT projects that the average daily traffic for trucks on I-95 at New Haven will increase from 15,317, recorded in 1998, to 19,332 in 2020. At present, 1,200 trucks cannot be accommodated at existing designated parking facilities. In the last few years, the capacity of public rest stops on I-95 has been expanded to provide a total of 80 more spaces and a new 150-space private facility has opened in Milford. Despite this, facilities have reported that to be at capacity. Based on the volume currently utilizing existing facilities, and the projections cited in CTDOT's study, CTDEP has concluded that an electrified facility in this vicinity will clearly receive the traffic needed for a viable case study.

The entire state of Connecticut has been designated as nonattainment for 8-hour ozone. Recently, Fairfield and New Haven Counties were designated as nonattainment areas for PM_{2.5}. As part of Connecticut's PM 2.5 nonattainment designation, design values were established based on three years of monitoring data. All of the PM_{2.5} monitoring sites in Connecticut measured levels below the 24-hour National Ambient Air Quality Standard except for the Stiles Street monitoring site in New Haven, which was the only location in the state to measure values above the standard. (See attached Figure in Appendix A) As part of EPA's nonattainment designation, EPA concurred with Connecticut's analysis that the area in the vicinity of the Stiles Street monitor is a hot spot for PM_{2.5} and achieving localized reduction is critical. This project will help advance that goal. Since EPA data indicate that diesel emissions account for over 20 percent of PM_{2.5} emissions in New England, any program that will decrease such emissions is valuable as an emission reduction strategy.

New Haven has the highest levels of air toxics in the New England according to EPA's National Air Toxics Assessment (NATA) and has some of the highest asthma rates in the State. In response to these concerns the City of New Haven has implemented a Community Clean Air Initiative that would be enhanced by this project. In 2004, with EPA funding, the City developed an air toxics inventory in which diesel PM was identified as the city's primary air toxic health threat. Currently, EPA's Healthy Community Program is funding an air toxic reduction project. The City has switched all diesel equipment to ultra low sulfur diesel (ULSD) fuel and school bus retrofits are underway. New Haven is also the site of the Q-Bridge reconstruction project, which, through the Clean Construction Initiative, has been responsible for 100 retrofits in the state off-road construction fleet. A significant truck electrification project upwind of New Haven would contribute to all of these efforts in New Haven.

Relying on studies of idle free corridors conducted by the NESCAUM, CTDEP has concluded that the best potential for truck stop electrification currently lies with privately owned truck stops along major corridors. Such facilities are highly accessible and provide amenities that encourage drivers to stay longer so the potential for emissions reductions from ATSE use is greater. There are two, privately owned truck stops along I-95 in Milford. A CTDEP review of the compliance history of the two sites clearly favored the Secondi Brothers Truck Stop. Management from Secondi has participated in ongoing discussions on the development of an idle free corridor in Connecticut and has made a commitment as a partner to ensure the success of this project. Using this grant to provide ATSE units at a large truck stop that meets the location criteria would yield the greatest benefit to the citizens of Connecticut and New England.

CTDOT has studied the availability of truck stop and rest area parking for trucks passing through the state. Fifty percent of surveyed truck drivers reported that they make one overnight stop in Connecticut, 15% made both overnight stops in the state. Existing truck stop facilities are above capacity and more facilities are needed. The results from this study will be invaluable to CTDOT as it contemplates providing ATSE systems at in-state rest stops and service plazas. In the long term, a successful ATSE facility would motivate other entrepreneurs in the private sector to open similar facilities, joining CTDOT and CTDEP in building an idle free corridor through Connecticut while helping to alleviate the shortage of truck parking facilities in the state.

c. Procurement and Installation

CTDEP will convene and oversee a technology selection team to participate in a competitive procurement process for the ATSE units. CTDEP will monitor the procurement process to assure compliance with 40 CFR Parts 31.36 and 31.37. CTDEP will model the procurement process used for school bus retrofits and identify a selection team, develop a request for proposals (RFP), and evaluation criteria. Members of the technology selection team would likely include: CTDEP, Secondi, the Connecticut Motor Transport Association (CMTA), CTDOT, and the Department of Motor Vehicles (CTDMV). The team will review available technologies for installation of up to 20 ATSE units at the Secondi facility. Secondi is already studying the ATSE technologies currently on the market and has conducted site visits to evaluate various technology options.

Secondi along with CTDEP (and its contractor) will oversee the installation of ATSE units at its facility. If a technology is selected that requires on-board installations, it will be very important that 40-100 trucks, which regularly use the Secondi facility, have the OBDs in place to maximize use of the ATSEs. CTDEP will work with members of the project team to identify fleet owners and independent drivers to receive any OBDs required for the selected ATSE system. The goal for this project would be to provide the technology to small or moderate fleets that travel primarily along the Northeast portion of the I-95 corridor. EPA Smartway Partners operating in the area will receive special consideration in this process. OBDs will be purchased and installed in the cabs. Milford mechanics that service the Secondi facility could join an area partnership, with training

by the selected vendor, to install the OBD units at the Secondi site, reducing the cost and inconvenience of the procedure.

d. Data Collection and Evaluation

CTDEP will meet with Secondi to establish data collection procedures. Secondi staff will collect the pre-study information regarding the average number of trucks parked overnight and the average number of trucks idling overnight at the facility to establish a pre-project baseline. CTDEP will work with Secondi to develop and implement a system for monitoring and recording the usage of the ATSE systems after they are installed. If a technology is selected that includes a system to automatically record the hour of use per night, that information will be retrieved for the study. It is understood that data on hours of use per overnight stay will be necessary to determine the reduction in idling times for the installation. CTDEP staff will evaluate the data in preparation for the case study report.

e. Reports

CTDEP will prepare all reports, including the final case study, required by EPA under this grant.

f. Publicizing Availability and Results

Secondi is a member of the National Association of Truck Stop Operators (NATSO) and can advance the project report through that organization. CTDEP and Secondi will publicize the availability of the electrified facility, using the list of EPA Smartway Partners, CTDEP/CTDOT contacts, NATSO and other contacts within the local trucking industry. NATSO and CMTA have agreed to partner with CTDEP in transferring the results of this project to other truck stops both in-state and throughout the region. CTDEP will work closely with environmental and community partners such as Connecticut Fund for the Environment, the Connecticut Coalition of Environmental Justice, Environment Northeast and the Cities of New Haven and Milford. State legislators, who have championed the project, will also be involved. These partners will be invited to help develop an education and outreach strategy for communicating the results of this project.

The final results of this study will be similarly publicized. CTDEP will work closely with the Northeast Diesel Collaborative to ensure that results are communicated and lessons learned are shared with other stakeholders throughout the northeast. NATSO and EPA's Smartway Partners will be invited to a meeting to discuss report findings and to strategize on next steps for promoting other idle free corridor projects. The report will be available on CTDEP's website and CTDEP will issue press releases promoting the project. CTDEP will also communicate results to the trucking industry through CTDOT and members of the State Implementation Plan Revision Advisory Committee (SIPRAC), which meets monthly at the CTDEP offices in Hartford.

g. Time Line

| Step | Action | Estimated Date |
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| 1. Site Selection | CTDEP will <ul style="list-style-type: none"> - evaluate existing relevant studies - compile site selection criteria - identify possible locations that meet the criteria, and - contact owner/operators of potential facilities. | May 2005 <i>Done</i> |
| 2. Planning | CTDEP will convene a project team to <ul style="list-style-type: none"> - develop a project plan - establish data collection procedures - conduct a baseline assessment, and - outline the procurement process for the ATSE units to assure compliance with 40 CFR Parts 31.36 and 31.37. | May 2005 <i>Partially Complete</i> |
| 3. Funding Becomes Available | CTDEP will hire a contractor to assist with project management responsibilities. | Within 6 months of funding availability |
| 4. Data Collection | CT DEP will <ul style="list-style-type: none"> - work with Secondi staff to collect the pre-study information, and - compile data into a report to share with the project team. | Within 7 months of funding availability |
| 5. ATSE Selection and Procurement | CT DEP will <ul style="list-style-type: none"> - establish a technology selection committee (TSC), - work with the TSC to develop an RFP and selection criteria to evaluate responses to the RFP, - monitor the procurement process to assure compliance with 40 CFR Parts 31.36 and 31.37, - work with the TSC to establish scoring criteria to evaluate responses and rank responses to the RFP, and - work with the project team to announce project initiation. | Within 9 months of funding availability, approximately June 2006 |
| 6. Installation of ATSE system | CTDEP and Secondi will oversee site preparation and installation of ATSE system. | Fall 2006 |
| 7. OBD installation | CTDEP will work with members of the project team to identify fleet owners and independent drivers to receive any OBDs required for the selected ATSE system. Smartway Partners operating in the area will be considered. OBDs will be purchased and installed in the cabs. | Fall 2006 - Winter 2007 |

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| 8. Promotion Activities | CTDEP and the project team will organize press events to publicize the availability of the electrified facility, using contacts from EPA, CTDEP/CTDOT, Secondi, NATSO, CMTA and the local trucking industry. | Spring 2007 |
| 9. Post-Installation Data Collection | CTDEP will work with Secondi to develop and implement a system for monitoring and recording the usage of the ATSE systems after they are installed. | Spring 2007-Spring 2008 |
| 10. Prepare Report | CTDEP will evaluate the data and prepare all reports, including the final case study, required by EPA under this grant. | Summer 2008 |
| 11. Publicize Results | CTDEP and project team members will work with CT Motor Transport, NATSO, the Northeast Diesel Collaborative, and the environmental community to publicize the final results of this project. -Smartway Partners will receive copies of the report. -CTDEP will also communicate results to the trucking industry through CTDOT and members of SIPRAC. -CTDEP will make the report available on its website and will issue press releases promoting the project. | Ongoing efforts to publicize achievement of significant milestones. Final report September 2008 |

2. Work Products:

A Memorandum of Understanding will be drafted to set out the roles and responsibilities of CTDEP, Secondi and other parties in establishing a partnership for this project. It is anticipated that CTDEP will seek to hire a contractor to provide assistance in the management of the program. A competitive process will be held for the procurement and installation of the ATSE systems, including any OBDs that may be required for operation of the selected system. In all cases, compliance with 40 CFR Parts 31.36 and 31.37 will be monitored by CTDEP. If OBDs are required for the selected system, the drivers or fleet owners who receive the units may be asked to sign an agreement to utilize the Secondi facility whenever possible to maximize the benefits received and the volume of data collected for the case study.

Press releases and related promotional material will be generated as part of the education and outreach process to publicize the availability of the ATSE facility and to share the results of the case study. CTDEP will prepare the final Case Study Report for the project and any interim reports required by EPA. Press releases and similar publications will be prepared and issued by CTDEP to advance public awareness and education.

3. Project Benefits:

Diesel engines contribute more than 20 percent of directly emitted fine particles in New England. Such particles are responsible for 15,000 deaths, nationwide, every year.

NESCAUM studies have estimated that 0.5 tons/year of NO_x from diesel idling can be eliminated with each electrified parking space. Since one third of the I-95 corridor in Connecticut, the busiest portion, lies within a nonattainment area for fine particulates, as well as 8-hour ozone, the establishment of an idle free corridor of electrified truck stops along this segment of highway would significantly improve the air quality and health in the region. Project benefits specific to the City of New Haven will complement benefits anticipated from on-going programs to reduce diesel emissions in the community. Idling trucks consume 0.8 to 1.0 gallons of fuel per hour. The annual cost of that consumed fuel is estimated at \$2,400 per truck plus an additional \$250 to cover idling related maintenance. Drivers and fleet owners will benefit significantly from the use of electrified facilities.

4. Projected Outcomes:

The successful establishment of one ATSE along I-95 will provide valuable data to CTDOT for the construction of ATSE units in other locations, public and private, along I-95 and other major highways in the state. It will raise electrification as a significant issue in the development of much-needed new parking areas. The convergence of the need for more parking spaces and a successful electrification project will improve the prospects for establishing an idle-free corridor in Connecticut and significantly decrease air pollution from diesel emissions in the state.

5. Roles of the Applicant and Partners (See timeline.)

6. Biographical Information (See appendix under “Key Personnel.”)

7. Applicant’s Record in the Field:

CTDEP has a well-established record of leadership on national environmental issues. The agency has successfully implemented programs to protect the environment and the public health of its citizens. Currently, the agency manages a budget of approximately \$250 million (operational and capital). Of this budget total, \$14 million is federal funding. CTDEP continues to meet federal reporting requirements and maintains an open and ongoing discussion with EPA Region 1 to ensure program deliverables and reporting requirements are met. In addition, to the agency’s overall record of effective environmental management some specific projects are worth noting.

- **Connecticut’s Clean School Bus Program** - Connecticut has been recognized as a national leader for the *Clean School Bus Program*. In 2002, CTDEP completed a full fleet retrofit of school buses serving the Norwich school district. This experience has been transferred to oversee large-scale urban retrofit projects in the cities of New Haven, Hartford and Bridgeport. These projects have been funded by supplemental environmental project (SEP) monies and represent an investment of approximately \$2 million to improve children’s health in Connecticut
- **Construction Retrofits**- Through a partnership with CTDOT and other stakeholders in Connecticut, the Clean Construction Initiative was launched in 2002 to implement retrofits of our off-road fleet. Through this initiative we have

completed approximately 100 retrofits through the Q-Bridge contract specification.

- **Building Local Constituencies** – Efforts are currently underway to build constituencies within cities and towns. A central part of this is educating the next generation of environmental stewards by investing in the development of a clean air curriculum for Connecticut’s middle school science classes. The curriculum is available on line at <http://www.k12science.org/curriculum/norwich>. The curriculum has been implemented in Norwich and will be implemented in New Haven this year.
- **Anti-idling**- A related and complementary outreach effort has focused on eliminating unnecessary idling. To remind school bus drivers and the general public about their obligation not to idle their vehicles, CTDEP and DOT have implemented a new anti-idling signage program. Signs have been posted in New Haven and Norwich and will be posted in Hartford.
- **Expand Diesel Retrofit Efforts Through Successful Public/Private Partnerships** – CTDEP plans to continue its successful efforts to promote statewide retrofits of construction equipment by developing preferential standards to be incorporated into the contracting process to extend diesel retrofits and the use of clean fuels for transit buses, state owned vehicles and other privately owned fleets through cooperative partnerships and to create incentives through recognition programs that encourage government and private industry to lead by example.
- **Enhancement of Heavy –Duty Diesel Truck Testing-** A stakeholder process has been initiated with CTDMV, the Connecticut Motor Transport Association, and National Trucking Association to explore potential enhancements to Connecticut’s road-side opacity testing program to consider phasing in tighter standards to reduce diesel emissions from trucks.

Detailed Itemized Budget: Assumes permitting, site engineering, site preparation and installation of up to 20 ATSE units and 40-100 OBDs if required for the ATSE technology

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| Personnel | In kind |
| Fringe Benefits | \$0 |
| Contractual Costs | \$75,000 |
| Travel | \$0 |
| Equipment | \$315,000 |
| Installation Charges | \$0 |
| Supplies | \$0 |
| Other | \$0 |
| Total Direct Costs | \$0 |
| Total Indirect Costs | \$0 |
| Total Cost | \$390,000 |

Key Personnel: See appendix.